WHAT IS CLAIMED IS:

1. A method for transmitting signals through a tubular comprising:

transmitting electromagnetic signals through a non-magnetic metal section in the tubular.

2. The method of claim 1 wherein the tubular comprises a metal.

3. The method of claim 1 wherein the tubular is contained within a subterranean well.

4. The method of claim 1 further comprising detecting the electromagnetic signals during the transmitting step.

5. The method of claim 1 further comprising detecting a field produced by the electromagnetic signals during the transmitting step.

6. The method of claim 1 further comprising controlling or monitoring a device or an operation associated with the tubular responsive to the transmitting step.

7. The method of claim 1 wherein the non magnetic metal section comprises a tubular segment having an inside, a sidewall and an outside.

8. The method of claim 1 wherein the non magnetic metal section comprises a stainless steel tubular segment.

9. The method of claim 1 further comprising selecting a material, a geometry, a treatment and an alloying of the non magnetic section to optimize the transmitting step.

10. The method of claim 1 wherein the electromagnetic signals comprise an element selected from the group consisting of radio

frequency (rf) signals, electric field signals, electromagnetic field signals and magnetic field signals.

11. A method for transmitting signals in a metal tubular having a non magnetic metal tubular section comprising:

transmitting electromagnetic signals from an inside of the non magnetic metal tubular section, through a sidewall of the non magnetic metal tubular section, to an antenna positioned on an outside of the non magnetic metal tubular section;

the antenna detecting the electromagnetic signals, or a secondary field associated with the electromagnetic signals.

12. The method of claim 11 further comprising controlling or monitoring a device or an operation associated with the metal tubular responsive to the detecting step.

13. The method of claim 11 further comprising transmitting electromagnetic signals from a sensing device associated with the metal tubular from the outside of the non magnetic metal tubular section, through the sidewall of the non magnetic tubular section.

14. The method of claim 11 wherein the non magnetic metal tubular section comprises austenitic stainless steel.

15. The method of claim 11 wherein the non magnetic metal tubular section comprises nitrogen strengthened austenitic stainless steel

16. The method of claim 11 wherein the antenna comprises a wire coil mounted to the outside of the non magnetic metal tubular section.

17. The method of claim 11 wherein the signals comprise electromagnetic signals.

18. The method of claim 11 wherein the electromagnetic signals comprise a signal selected from the group consisting of radio

frequency signals, electric field signals, electromagnetic field signals and magnetic field signals.

19. The method of claim 11 wherein the metal tubular is contained in a subterranean well.

20. The method of claim 19 wherein the method is used to improve production from the well.

21. A method for transmitting signals in a metal tubular having a non magnetic metal tubular section comprising:

moving a transmitter device configured to emit electromagnetic signals through the metal tubular and through the non magnetic metal tubular section;

emitting the electromagnetic signals during the moving step; and

detecting the electromagnetic signals, or a secondary field associated with the electromagnetic signals, using an antenna positioned proximate to the non magnetic metal tubular section.

22. The method of claim 21 further comprising controlling or monitoring a device or an operation associated with the metal tubular responsive to the detecting step.

23. The method of claim 21 further comprising transmitting signals through the non magnetic metal tubular section during the detecting step.

24. The method of claim 21 further comprising detonating a perforating device responsive to the detecting step.

25. The method of claim 21 further comprising actuating a packer device responsive to the detecting step.

26. The method of claim 21 further comprising monitoring a sensor responsive to the detecting step.

27. The method of claim 21 wherein the non magnetic metal tubular section includes a y-block and the antenna is sealed in the y-block.

28. The method of claim 21 wherein the electromagnetic signals comprise modulated electromagnetic signals in a format selected from the group consisting of PSK (phase shift keying), FSK (frequency shift keying), ASK (amplitude shift keying), QPSK (quadrature phase shift keying), QAM (quadrature amplitude modulation), and spread spectrum techniques.

29. The method of claim 21 wherein the metal tubular is contained in an oil and gas well and the detecting step is used to improve production from the well.

30. The method of claim 21 wherein the moving step is performed using a wire line, a slick line, a parachute or a robot.

31. A signal transmission system comprising:

a metal tubular;

a non magnetic metal section on the metal tubular; and

an antenna outside the tubular proximate to the non magnetic metal section configured to receive electromagnetic signals transmitted through the non magnetic metal section.

32. The system of claim 31 wherein the non magnetic metal section comprises a tubular member.

33. The system of claim 31 wherein the non magnetic metal section comprises a stainless steel tubular member.

34. The system of claim 31 further comprising a transmitter device inside the metal tubular configured to emit the electromagnetic signals.

35. The system of claim 31 wherein the non magnetic metal section has an outside diameter and the antenna comprises a coiled wire on the outside diameter.

36. The system of claim 31 further comprising a receiver-control circuit outside of the metal tubular in electrical communication with the antenna configured to control or monitor a device or operation associated with the metal tubular.

37. The system of claim 31 wherein the metal tubular is contained in a subterranean well.

38. A signal transmission system comprising:

a metal tubular having a non magnetic metal section;

a transmitter device configured to move through the metal tubular and the non magnetic metal section and to emit electromagnetic signals through the non magnetic metal section; and

an antenna outside the non magnetic metal section configured to detect the electromagnetic signals or a secondary field associated with the electromagnetic signals.

39. The system of claim 38 wherein a material, a geometry, a treatment, and an alloying of the non magnetic metal section are selected to optimize signal transmission therethrough.

40. The system of claim 38 wherein the non magnetic metal section has a thickness T and the antenna has a length L selected to optimize signal transmission through the non magnetic metal section.

41. The system of claim 38 further comprising a control circuit outside of the metal tubular in signal communication with the antenna configured to control or monitor a device or operation associated with the metal tubular responsive to the electromagnetic signals.

42. The system of claim 38 further comprising a y-block on the non magnetic metal section configured to house and seal the antenna.

43. The system of claim 38 wherein the non magnetic metal section comprises stainless steel.

44. The system of claim 38 wherein the non magnetic metal section comprises nitrogen strengthened austenitic stainless steel.

45. A signal transmission system in a metal tubular comprising:

a transmitter device inside the metal tubular configured to emit electromagnetic signals;

a non magnetic metal tubular section on the metal tubular configured to transmit the electromagnetic signals;

an antenna outside the metal tubular proximate to the non magnetic metal tubular section configured to receive the electromagnetic signals or a secondary field associated with the electromagnetic signals; and

a receiver-control circuit outside the metal tubular in electrical communication with the antenna configured to detect the electromagnetic signals or the secondary field, and to control or monitor a device or operation associated with the metal tubular.

46. The system of claim 45 wherein the device comprises a perforating device.

47. The system of claim 45 wherein the device comprises a packer device.

48. The system of claim 45 wherein the device comprises a sensor device.

49. The system of claim 45 wherein the metal tubular comprises a component of an oil and gas well.

50. The system of claim 45 wherein the non magnetic metal tubular section comprises austenitic stainless steel.

51. The system of claim 45 wherein the non magnetic metal tubular section comprises nitrogen strengthened austenitic stainless steel.

52. The system of claim 45 wherein the electromagnetic signals comprise modulated electromagnetic signals selected from the group consisting of radio frequency (rf) signals, electric field signals, electromagnetic field signals and magnetic field signals.

53. A signal transmission system in a metal tubular comprising:

a non magnetic metal tubular section on the metal tubular having a sidewall;

an antenna proximate to the non magnetic metal tubular section;

a transmitter device inside the metal tubular configured to transmit electromagnetic signals through the sidewall of the non magnetic metal tubular section to the antenna; and

a circuit in signal communication with the antenna configured to detect, amplify, filter and tune the electromagnetic signals, or a secondary field associated with the electromagnetic signals.

54. The system of claim 53 wherein the antenna comprises a generally cylindrical non conductive core mounted to an outside diameter of the non magnetic metal tubular section, and a metal wire wrapped around the core.

55. The system of claim 53 further comprising a y-block on the non magnetic metal tubular section configured to seal the antenna and house the circuit.

56. The system of claim 53 wherein the electromagnetic signals comprise modulated electromagnetic signals in a format selected from the group consisting of PSK (phase shift keying), FSK (frequency shift keying), ASK (amplitude shift keying), QPSK (quadrature phase shift keying), QAM (quadrature amplitude modulation), and spread spectrum techniques.

57. The system of claim 53 further comprising a device outside of the metal tubular in signal communication with the circuit, and wherein the circuit is configured to transmit control signals to the device.

58. The system of claim 53 further comprising a sensing device outside of the metal tubular in signal communication with the circuit configured to detect a parameter, and wherein the circuit is configured to transmit signals representative of the parameter through the non magnetic metal tubular section.

59. The system of claim 53 wherein the transmitter device includes a housing, a coil in the housing and an oscillator in signal communication with the coil.

60. A method for improving production in an oil and gas well having a metal tubular with a non magnetic metal section comprising:

moving a transmitter device through the metal tubular and the non magnetic metal section while emitting electromagnetic signals therefrom;

transmitting the electromagnetic signals through the non magnetic metal section;

detecting the electromagnetic signals transmitted through the non magnetic metal section; and

controlling or monitoring a device or an operation associated with the well responsive to the detecting step.

61. The method of claim 60 wherein the detecting step is performed using an antenna outside of the non magnetic metal section configured to detect the electromagnetic signals or a secondary field associated with the electromagnetic signals.

62. The method of claim 60 wherein the non magnetic metal section comprises a stainless steel tubular segment.

63. The method of claim 60 wherein the device comprise an element selected from the group consisting of perforating devices,

packer devices, valves, sleeves, sensors, fluid analysis sensors, formation sensors and control devices.

64. The method of claim 60 wherein the antenna is located in a first zone of the well and the device is located in a second zone of the well.